

Sub 11
5. (Amended) The organic-inorganic composite graded material of claim 1,
which has a thickness of 5 μm or less.

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6. (Amended) The organic-inorganic composite graded material of claim 3,
wherein the composite in which the organic polymer compound and the metallic
compound are bonded to each other is a hydrolysis product from a mixture of the
organic polymer compound having a molecule containing a metal-containing group
capable of bonding to a metal oxide by hydrolysis with a metal compound capable of
forming a metal oxide by hydrolysis.

7. (Amended) The organic-inorganic composite graded material of claim 4,
wherein the composite in which the organic polymer compound and the metallic
compound are bonded to each other is a hydrolysis product from a mixture of the
organic polymer compound having a molecule containing a metal-containing group
capable of bonding to a metal nitride polymer by hydrolysis with a metal nitride polymer.

8. (Amended) The organic-inorganic composite graded material of claim 6,
wherein the organic polymer compound having a molecule containing a metal-
containing group capable of bonding to a metal oxide or a metal nitride polymer by
hydrolysis is a copolymer or polycondensate from a monomer having the metal-
containing group and a monomer containing no metal.

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11. (Amended) The organic-inorganic composite graded material of claim 1,
which is a film-shaped product formed on an organic substrate, the film-shaped product
substantially having a surface formed of a component from the organic polymer
compound, the surface being in contact with the organic substrate, and an open surface
formed of a component from the metallic compound.

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12. (Amended) A process for the production of the organic-inorganic composite graded material recited in claim 1, which comprises preparing a coating solution which is a mixture of (A) an organic polymer compound having a molecule containing a metal-containing group capable of bonding to a metal oxide or metal nitride polymer by hydrolysis with (B) (a) a metal compound capable of forming a metal oxide by hydrolysis or (b) a metal nitride polymer, or preparing a hydrolysis product of the mixture, forming a coating film made of the above coating solution on a substrate made of an organic material and drying the coating film under heat.

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14. (Amended) The process of claim 12, wherein the organic polymer compound, as Component (A), having a molecule containing a metal-containing group capable of bonding to a metal oxide or a metal nitride polymer by hydrolysis is a copolymer or polycondensate from a monomer having the metal-containing group and a monomer containing no metal.

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15. (Amended) The process of claim 12, wherein the organic polymer compound, as Component (A), having a molecule containing a metal-containing group capable of bonding to a metal oxide or a metal nitride polymer by hydrolysis is a copolymer from a monomer having an ethylenically unsaturated group and a monomer containing an ethylenically unsaturated group and the metal-containing group.

16. (Amended) The process of claim 12, wherein the metal compound, as Component (B) (a), capable of forming a metal oxide by hydrolysis is a metal alkoxide.

17. (Amended) A coating agent made of the organic-inorganic composite graded material of claim 1 for forming a coating film on a substrate.

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19. (Amended) The coating agent of claim 17, which is for use for forming a coating film on an organic substrate.

20. (Amended) The coating agent of claim 17, which is for use as an adhesive between an organic material and an inorganic or metallic material.

21. (Amended) The coating agent of claim 17, which is for use for forming an intermediate film to be interposed between an organic substrate and a coating layer containing at least an inorganic or metallic material.

26. (Amended) The coating agent of claim 17, which is for use for forming an intermediate film to be interposed between a metallic substrate having an organic coating film on a surface and a photocatalytic material layer.

27. (Amended) The coating agent of claim 22, wherein the photocatalytic material layer is a titanium dioxide coating film.

28. (Amended) A substrate using the organic-inorganic composite graded material recited in claim 1.

32. (Amended) An organic-inorganic adhesive material using the organic-inorganic composite graded material of claim 1 as an adhesive.

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33. (Amended) An article having the organic-inorganic composite graded material of claim 1 interposed as an intermediate film and having a coating layer containing at least an inorganic or metallic material.